

CLAIMS

1. A transmitting apparatus comprising:
 - an orthogonal frequency division multiplexing
 - 5 section that performs orthogonal frequency division multiplexing of a transmit signal;
 - an insertion section that inserts a guard interval in a transmit signal that has undergone orthogonal frequency division multiplexing by said orthogonal
 - 10 frequency division multiplexing section; and
 - a control section that increases a length of said guard interval inserted by said insertion section as a number of retransmissions increases.
- 15 2. The transmitting apparatus according to claim 1, further comprising a coding section that turbo codes said transmit signal and outputs systematic bit data and parity bit data, wherein said control section inserts a guard interval independently for said systematic bit data and
- 20 said parity bit data.
3. The transmitting apparatus according to claim 2, wherein said control section makes a length of said guard interval of said systematic bit data longer than a length
- 25 of said guard interval of said parity bit data.
4. The transmitting apparatus according to claim 2, wherein said control section lengthens only said guard

interval of said systematic bit data as said number of retransmissions increases.

5. The transmitting apparatus according to claim 2,
5 further comprising an allocation section that allocates said systematic bit data and said parity bit data to different symbols.

6. The transmitting apparatus according to claim 1,
10 wherein said control section sets a length of said guard interval according to delay distribution information.

7. The transmitting apparatus according to claim 6,
wherein said delay distribution information is
15 transmitted from a communicating party.

8. The transmitting apparatus according to claim 6,
wherein said delay distribution information is detected from a received signal.

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9. The transmitting apparatus according to claim 1,
wherein said control section sets a length of said guard interval according to a transmission time interval.

25 10. The transmitting apparatus according to claim 1,
wherein said control section sets a length of said guard interval according to a used band.

11. The transmitting apparatus according to claim 10, wherein said control section makes said guard interval larger in proportion as a ratio of said used band to a band whose use is permitted is smaller.

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12. The transmitting apparatus according to claim 1, further comprising a spreading section that performs spreading processing of a transmit signal, wherein said orthogonal frequency division multiplexing section
10 performs orthogonal frequency division multiplexing processing of a transmit signal that has undergone spreading processing by said spreading section.

13. The transmitting apparatus according to claim 12,
15 wherein a spreading ratio of said spreading section is made "1" and a code multiplexing number of said transmit signal is made "1."

14. The transmitting apparatus according to claim 1,
20 wherein said control section makes a length of a guard interval in a retransmission an integral multiple of a length of a guard interval in a first transmission.

15. A base station apparatus equipped with a
25 transmitting apparatus, said transmitting apparatus comprising:

an orthogonal frequency division multiplexing section that performs orthogonal frequency division

multiplexing of a transmit signal;

an insertion section that inserts a guard interval
in a transmit signal that has undergone orthogonal
frequency division multiplexing by said orthogonal
5 frequency division multiplexing section; and

a control section that increases a length of said
guard interval inserted by said insertion section as a
number of retransmissions increases.

10 16. A communication terminal apparatus equipped with
a transmitting apparatus, said transmitting apparatus
comprising:

an orthogonal frequency division multiplexing
section that performs orthogonal frequency division
15 multiplexing of a transmit signal;

an insertion section that inserts a guard interval
in a transmit signal that has undergone orthogonal
frequency division multiplexing by said orthogonal
frequency division multiplexing section; and

20 a control section that increases a length of said
guard interval inserted by said insertion section as a
number of retransmissions increases.

17. A transmitting method comprising:

25 a step of performing orthogonal frequency division
multiplexing of a transmit signal;

a step of inserting a guard interval in a transmit
signal that has undergone orthogonal frequency division

multiplexing; and

a step of lengthening a guard interval inserted by said insertion step as a number of retransmissions increases.